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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,978	02/25/2000	Gerald M. Benson	55250USA1A	9164
32692	7590	11/04/2004		
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427				
			EXAMINER CHEVALIER, ALICIA ANN	
			ART UNIT 1772	PAPER NUMBER

DATE MAILED: 11/04/2004

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GROUP 1700

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/515,978
Filing Date: February 25, 2000
Appellant(s): BENSON ET AL.

James V. Lilly
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 16, 2004.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

Appellant's brief includes a statement that claims 16-23 and 40 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

Appellant has grouped the claims as follows:

- 1: Claims 16-19 stand or fall together
- 2: Claims 20-23 stand or fall together, and
- 3: Claim 40 stands or falls together.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,657,162	NILSEN et al.	8-1997
5,614,286	BACON, Jr. et al.	3-1997

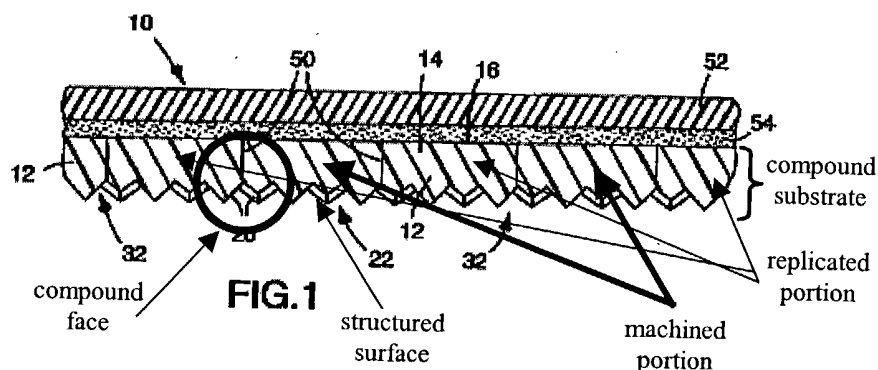
(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

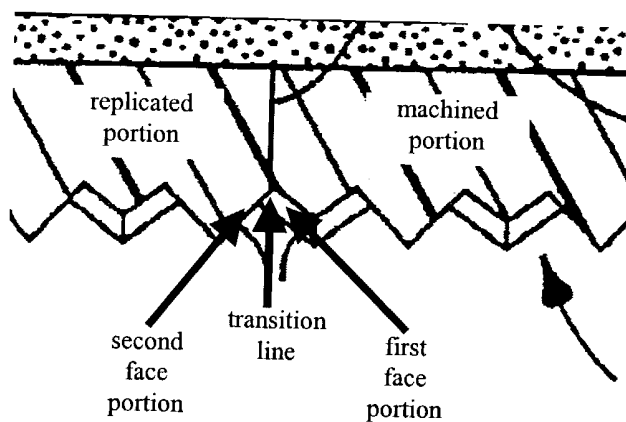
1. Claim 40 is rejected under 35 U.S.C. 102(b) as being anticipated by Bacon, Jr. et al. (U.S. Patent No. 5,614,286). This rejection is of record in the office action mailed January 2, 2003, paper #9, page 2, paragraph #6 and presented below.

Bacon discloses a conformable cube corner reflective sheeting comprising a plurality of discrete cube corner segments (*substrate and discontinuous substrate with faces*) that are conformably bonded together (*col. 6, lines 46-57 and figure 1*). The height of the cube corner geometry on the segments is between about 125 to 375 microns (*col. 7, lines 1-5*). From the figures the retroreflective sheeting can be seen to have a transition line separating the substrates and that the compound face terminates at a nondihedral edge which is not parallel to the nondihedral edge.

The following figures from Bacon accompanies the discussion of claim 40.



Enlarged view of compound face.

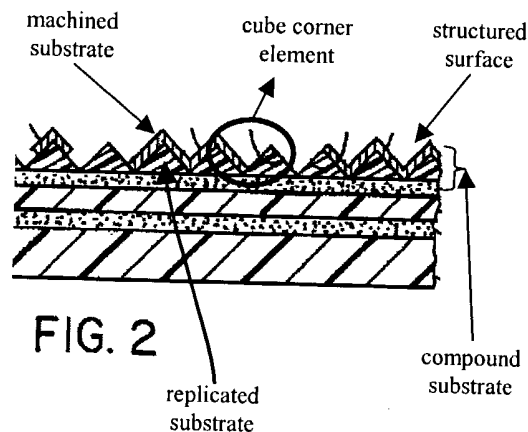


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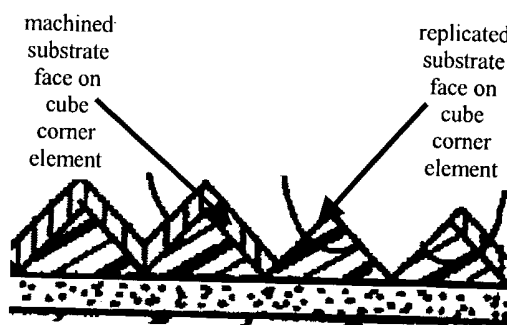
2. Claims 16-23 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Nilsen et al. (U.S. Patent No. 5,657,162). This rejection is of record in the office action mailed May 9, 2002, paper #6, page 4, paragraph #8 and the office action mailed January 2, 2003, paper #9, page 2, paragraph #6 and presented below.

Nilsen discloses a retroreflective article comprising a solid cube corner microprism (*substrate with faces*) coated with a discontinuous metallic layer (*discontinuous substrate with faces*, col. 2, lines 35-67 and figure 2). From the figures the retroreflective article can be seen to have a transition line separating the substrates and that the compound face terminates at a nondihedral edge which is not parallel to the nondihedral edge.

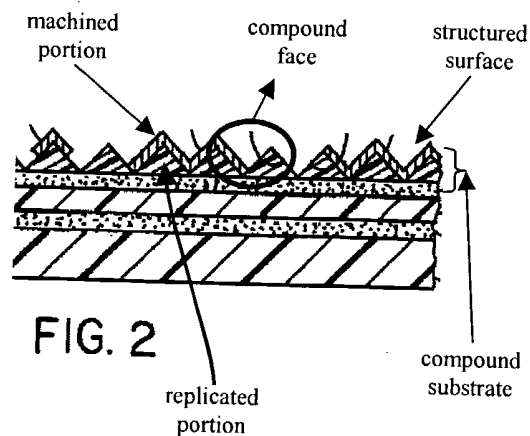
The following figures from Nilsen accompanies the discussion of claims 16 and 20.



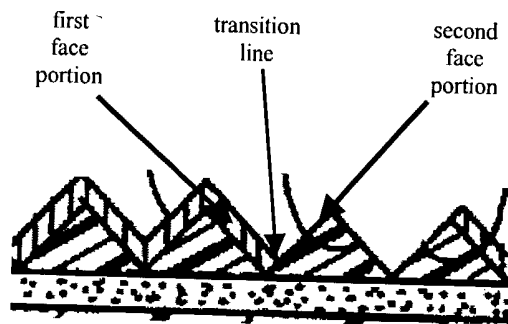
Enlarged view of cube corner element.



The following figures from Nilsen accompanies the discussion of claim 40.



Enlarged view of compound face.



(11) Response to Argument

3. Appellant's arguments on pages 3-5 of the Appeal Brief regarding the whether "machined substrate" and "machined portion" are method limitations or not of record have been carefully considered but are deemed unpersuasive.

Appellant states that "[t]he Examiner argues that the terminology 'machined substrate' and 'machined potion' constitute method limitations that are not germane to patentability ..."

First, the Examiner has not stated that the terms “machined substrate” and “machined portion” constitute method limitations. As seen from the office action mailed April 13, 2004, paper #20, pages 2-3, paragraph #5, the Examiner states that the terms have been given their broadest reasonable interpretation in light of the specification. MPEP § 2111. As previously stated, since Appellant has not given a definitions to the terms “machined substrate” and “machined portion,” they have been given their broadest reasonable interpretation of a substrate or portion made by a machine.

Bacon discloses the cube corner retroreflective sheeting is made by using a mold (*Bacon col. 3, line 65 through col. 4, line 19*), i.e. the sheeting is made by a machine and is thus a machined substrate/portion.

Nilsen discloses that the metallic layer, i.e. Appellant’s “machined substrate,” is vacuum deposited of otherwise treated to selectively form transparent reflective metallic deposits on the surface of the microprism, i.e. Appellant’s “replicated substrate,” formations leaving some prisms uncoated (*Nilsen col. 2, lines 45-49*). Therefore, since the metallic layer is formed by a machine that can vacuum deposit the layer on the microprisms, it is a machined substrate/portion.

Second, the Examiner’s comments regarding that method limitations are not germane to patentability were directed toward Appellant’s arguments in the response filed October 6, 2003, paper # 19. Appellant had argued that both Bacon and Nilsen failed to disclose a method of making a machined substrate. As pointed out in the office action mailed April 13, 2004, paper #20, pages 2-3, paragraph #5, the method of forming the product is not germane to the issue of

patentability of the product itself. MPEP § 2113. Furthermore, it is noted that claims 16, 20 and 40 do not contain limitations directed the method of making a machined substrate.

Appellant further argues that the term “machined” defines the physical characteristics of the substrate or portion that it modifies. Specifically Appellant states that “machined” is used to describe a surface that results when material has been physically removed from a blank to form the desired substrate or surface, which is further described in the specification on page 9, lines 1-12 and page 9, line 26 through page 10, line 5.

First, Appellant had not defined the term “machined substrate” or “machined portion” in the specification. It is further noted that Appellant’s specification has a Glossary of Selected Terms (*specification pages 26-28*), which defines certain terms but does not contain a definition for “machined substrate” or “machined portion.”

Second, the description of the machining process discussed in the specification on page 9, lines 1-12 and page 9, line 26 through page 10, line 5 describes multiple processes used in the machining operation to create the “machined substrate/portion,” but does not give a definition of a “machined substrate/portion” structure.

The specification on page 9, lines 1-12 recites:

Fig. 4 depicts the **machining operation** to form a machined substrate 28 in the deck portion 27 of the blank 22. Cutting tools 40a, 40b, 40c (collectively referred to as 40) move along the deck 27 (see Fig. 2) to form a structured surface 50 of machined substrate 28, whether by motion of the cutting tools or the substrate or both, to form groove side surfaces (see Fig. 5). The cutting tool 40a forms reference grooves 44c, 44f in respective reference pads 30c, 30f, cutting tool 40b forms reference grooves 44a, 44d in respective reference pads 30a, 30d, and cutting tool 40c forms reference grooves 44b, 44e in respective reference pads 30b, 30e. A circular reference groove 46a, 46b, 46c, 46d, 46e, 46f concentric with the center of the machined substrate 28 is optionally formed in each of the respective reference pads 30. Reference marks 43 may optionally be formed on the edge of the modified blank 22' to assist in locating the compound substrate 82 to perform the cutting operations illustrated in Fig. 7.

The specification on page 9, line 26 through page 10, line 5 recites:

The machined faces can be formed by any one of a number of known material removal techniques, for example: milling, where a rotating cutter, spinning about its own axis, is tilted and drawn along the surface of the substrate; fly-cutting, where a cutter such as a diamond is mounted on the periphery of a rapidly rotating wheel or similar structure which is then drawn along the surface of the substrate; ruling, where a nonrotating cutter such as a diamond is drawn along the surface of the substrate; and grinding, where a rotating wheel with a cutting tip or edge is drawn along the surface of the substrate. Of these, preferred methods are those of fly-cutting and ruling.

These passages discuss several different processes that end in the same “machined substrate/portion” which results in a discontinuous cube corner structure.

Finally, in view of the discussion above about the interoperation of the limitation “machined substrate/portion” and as seen in the rejections above, both Bacon and Nilsen disclose substrates/portions that have been “machined” and form a discontinuous cube corner structure.

Appellant further argues that a machined substrate and a replicated substrate are structurally different from one another. Specifically, that a machined substrate has surface features that result when the material is removed from the blank and the replicated substrate is a reproduction of a pre-existing surface.

Appellant’s argument does not point out how the replicated substrate is different from the replicated substrate, it merely restates that the machined and replicated substrates are made by a different process.

A fair interoperation of the claimed invention in light of the specification is a compound substrate comprising a continuous substrate, i.e. the replicated substrate, with a structured surface and a discontinuous substrate, i.e. the machined substrate, covering a portion a the structured surface of the continuous substrate. The compound substrate further comprising at lease on cube

corner element that has at least one face disposed on the continuous substrate and at least another face disposed on the machined substrate.

As seen in the figures in the rejections above, both Bacon and Nilsen disclose a compound substrate.

4. Appellant's arguments on page 5 of the Appeal Brief regarding whether either Bacon or Nilsen provide a substantially identical product to that of the claimed substrates of record have been carefully considered but are deemed unpersuasive.

Appellant argues that Bacon has no machined surfaces and is entirely silent about a machined surface. First, claim 40 which is rejected by Bacon does not claim "machined surfaces." It claims that the compound substrate comprises a "machined portion" and the machined portion has a first face portion. Second, as discussed above, since Appellant has not given a definitions to the terms "machined substrate/portion" it has been given its broadest reasonable interpretation of a substrate or portion made by a machine. Finally, Bacon discloses the cube corner retroreflective sheeting is made by using a mold (*Bacon col. 3, line 65 through col. 4, line 19*), i.e. the sheeting is made by a machine and is thus a machined substrate/portion.

Appellant argues that Nilsen also fails to disclose a machined substrate. In view of the above discussion of broadest reasonable interpretation of the term "machined substrate" it is noted that Nilsen does disclose a machined substrate. Nilsen discloses that the metallic layer, i.e. Appellant's "machined substrate," is vacuum deposited or otherwise treated to selectively form transparent reflective metallic deposits on the surface of the microprism, i.e. Appellant's "replicated substrate," formations leaving some prisms uncoated (*Nilsen col. 2, lines 45-49*).

Therefore, since the metallic layer is formed by a machine that can vacuum deposit the layer on the microprisms, it is a machined substrate/portion.

5. Appellant's arguments on pages 5-7 of the Appeal Brief regarding whether either Bacon or Nilsen anticipate any of the claims of record have been carefully considered but are deemed unpersuasive.

Appellant argues that Bacon fails to disclose the machined portions of the substantially planar surface of at least one compound face. As seen above in the rejection over Bacon and in the accompanying figure, Bacon discloses these features.

Appellant argues that with regard to claims 16-19, Nilsen fails to disclose a machined substrate. As seen above in the rejection over Nilsen and discussion above of the interpretation of "machined substrate" Nilsen discloses this feature.

Appellant argues that with regard to claims 20-22, Nilsen fails to disclose discrete portions of the machined substrate disposed on the structured surface and that each of the replicated and machined substrates have an exposed surface that defines a face of a cube corner element. As seen above in the rejection over Nilsen and in the accompanying figure, Nilsen discloses these features.

Appellant argues that with regard to claim 23, Nilsen fails to disclose a cube corner element made by replication of the compound substrate. Appellant's argument regarding claim 23 is moot since claims 20-23 fall and stand together. Therefore, for purposes of appeal since claim 20 is the broadest claim of the group only claim 20 will be addressed.

Appellant further argues that it appears that the argument regarding Bacon is based on a misunderstanding that the presence of a transition line that separates the machined portion from the replicated portion of the substrate.

The specification defines the “transition line” as a line or other elongated feature that separates constituent faces of a compound face (*specification page 28, lines 25-26*), which the compound face is a face which comprises a at least one face from the machined substrate and at least one face from the replicated substrate (*specification page 26, lines 13-18*). Therefore, the transition line is a line between the machined substrate face and the replicated substrate face. As seen from the figures above Bacon has a transitional line between the face of the machined substrate and the face of the replicated substrate.

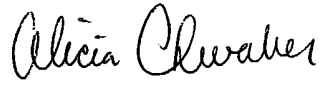
Appellant also argues that it appears that the argument regarding Nilsen is based on a misunderstanding. Specifically, Nilsen does not disclose faces that comprise both machined and replicated substrate or portion and since it does not disclose machined faces, it does not disclose a transition line that separates the machined and replicated portions. As seen above in the rejection over Nilsen and in the accompanying figure, Nilsen discloses these features.

For the above reasons, it is believed that the rejections should be sustained.

Application/Control Number: 09/515,978
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Respectfully submitted,




Alicia Chevalier
October 28, 2004

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1772

10/28/04